



A.D. 1866, 17th DECEMBER. N^o 3309.

SPECIFICATION

OF

JOHN HAUWORTH.

SMOKE-CONSUMING FURNACE.

LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,

PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY:

PUBLISHED AT THE GREAT SEAL PATENT OFFICE,

25, SOUTHAMPTON BUILDINGS, HOLBORN.

1867.



A.D. 1866, 17th DECEMBER. N° 3309.

Smoke-consuming Furnace.

(This Invention received Provisional Protection only.)

PROVISIONAL SPECIFICATION left by John Hauworth at the Office of the Commissioners of Patents, with his Petition, on the 17th December 1866.

I, JOHN HAUWORTH, of Todmorden, in the County of Lancaster, Manager to Messieurs Fielden Bro^{rs}., Cotton Spinners and Manufacturers, do hereby
5 declare the nature of the said Invention for “IMPROVEMENTS IN STEAM BOILER AND OTHER FURNACES,” to be as follows :—

The object of my Invention is to consume smoke and economise fuel.

In performing my Invention I build a furnace or fire-grate projecting in front of the boiler, and somewhat higher than the top of the flue, the grate
10 bars extending both inside and outside the front of the boiler; the top of the furnace or fire-place outside the boiler is left open for the purpose of supplying fuel, and the front of the furnace is provided with an aperture or apertures extending across its front for the purpose of admitting air and pushing forward the fuel and removing clinkers, etc. from the grate bars; air is also admitted to
15 the fire between the grate bars, but none is allowed to enter through the open top of the furnace, coal or other fuel being heaped on to prevent it. The top of the furnace may be provided with a hopper, so that a good supply of fuel can be kept up, and the air excluded from entering the furnace except between the grate bars and through the aperture or apertures. At the back of the furnace
20 I arrange a number of fire-bricks, either extending from the grate bars to the top of the flue or otherwise, between which the products of combustion pass, and which when heated help to consume the smoke. The bridge is placed near the back end of the boiler.

LONDON :

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1867.

THE HISTORY OF THE

REIGN OF

CHARLES THE FIRST

BY

JOHN BURNET

OF

THE UNIVERSITY OF OXFORD

IN TWO VOLUMES

LONDON

Printed by J. Streater, at the Sign of the Gun, in St. Dunstons Church-yard, 1679.

THE SECOND EDITION, CORRECTED AND ENLARGED.

1724.

Printed by J. Streater, at the Sign of the Gun, in St. Dunstons Church-yard, 1724.

THE HISTORY OF THE

REIGN OF